

Work Order ID 51486

August 25, 2009 1:32:40 PM

Page 1

Item ID: D044-715-011

Accept

Revision ID: A

Item Name: R44 Cargo Mirror

Setup Start

Stop

Start Date: 8/24/09 Start Qty: 2.00

Cust Item ID:

Required Date: 8/24/09 Req'd Qty: 2.00

Customer:

Reference:

Approvals:

Process Plan:

Date: 09-08-25 Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D3243

Rev A

IIN-D044-715

Rev A

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPPD044-715-011

110

0.00



FLOW WATER JET

Waterjet

Memo

0.00

FLOW CNC Waterjet

I-Cut as per Dwg D3243

Dwg Rev:

Prog Rev:

Handwritten notes and signatures:

- 8/24/09
- CHC7003
- PER ECN 08-548
- D2811 Rev. G
- D2829 Rev. B
- HJ for BG 09/10/21
- AB 9-10-14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 51486

August 25, 2009 1:32:40 PM



Page 2

Item ID: D044-715-011

Accept



Setup Start



Revision ID: A

Stop



Item Name: R44 Cargo Mirror

Start Date: 8/24/09 Start Qty: 2.00



Cust Item ID:

Required Date: 8/24/09 Req'd Qty: 2.00



Customer:

Reference:

Run Start



Approvals: Process Plan: Date:

Tooling: Date:

Stop



QC: Date:

SPC (Y/N): Date:

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

HB 9-10-03

130

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

=> 8/26/09

(X3)

7

140

NC BRAKE

0.00



Brake NC

Memo

0.00

Brake NC

Bend as per Dwg D3243

8/26/10/12

(2) (1)

10/20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D044-715-011 PAR #: _____ Fault Category: Small Qty NCR: (Yes) No DQA: 2 Date: 05-11-24
 Resolution: Scrap Disposition: Scrap QA: N/C Closed: 2 Date: 05-11-24

NCR: <u>51486</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<u>09/10/19</u>	<u>140</u>	<u>1 part was scrap out of tolerance Part was bent incorrectly R.C LOA</u>	<u>[Signature]</u> <u>05/11/22</u>	<u>Scrap & destroy no replace.</u>	<u>SS</u> <u>09/10/19</u>	<u>S</u> <u>09/10/20</u>	<u>[Signature]</u> <u>05/11/22</u>	<u>[Signature]</u> <u>05-10-19</u>

NOTE: Date & initial all entries

Work Order ID 51486

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Page 3

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Revision ID: A

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Start Date: 8/24/09 Start Qty: 2.00

Required Date: 8/24/09 Req'd Qty: 2.00

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

QC: Date: SPC (Y/N): Date:

Run Start

Stop

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

QC6- Inspect dimensions to drawing

0.00

27 8/21/20

0.00

(X2)

(X6)

QC

Memo

Quality Control

160

Chemical Conversion Coat per QSI005 4.1

0.00

0.00

BL 09-10/20

(2)

HandFinish

Memo

Hand Finishing

170

QC3- Inspect Part Finish

0.00

0.00

27 09/10/20

(X2)

QC

Memo

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Page 4

Item ID: D044-715-011

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Setup Start



Revision ID: A

Stop



Item Name: R44 Cargo Mirror

Start Date: 8/24/09 Start Qty: 2.00



Cust Item ID:

Required Date: 8/24/09 Req'd Qty: 2.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

180



Small Fab

Small Fab

0.00

Memo

0.00

Small Fab

Assemble as per Dwg d3243

8/30/11/16 (2)

190



QC

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

Quality Control

=> 8/31/11/16

(12)

200



Powdercoat

Black Sandtex(Ref:4.3.5.7) per QSI005 4.3

0.00

Memo

0.00

Powder Coating

*** Plug holes with screws before powdercoat ***

1109091

START TIME: 11:45 AM
OVEN TEMPERATURE: 320°F
FINISH TIME: 12:15 PM

EV 09/11/11 (12) O

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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August 25, 2009 1:32:40 PM

Page 5

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Setup Start

Stop

Start Date: 8/24/09 Start Qty: 2.00

Required Date: 8/24/09 Req'd Qty: 2.00

Cust Item ID:

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

Stop

QC:

Date:

SPC (Y/N):

Date:

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210

QC3- Inspect Part Finish

0.00

BR 02 11-18

②



QC

Memo

0.00

Quality Control

220

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

9/1/10 ② ③

230

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

② 8/24/09

②

③

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 51486

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Item ID: D044-715-011

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Setup Start



Revision ID: A

Stop



Item Name: R44 Cargo Mirror

Start Date: 8/24/09 Start Qty: 2.00



Cust Item ID:

Required Date: 8/24/09 Req'd Qty: 2.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240	Packaging	0.00							
	Packaging								
	Memo	0.00							
	Identify and pack for shipping as per PPP D044-715-011								
	Location: _____								
250	QC21- Final Inspection - Work Order Release	0.00							
	QC								
	Memo	0.00							
	Quality Control								

9/11/19 (2)

09/11/19

09-11-19 (2)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

August 25, 2009 1:32:39 PM

Page 1

Work Order ID: 51486

Parent Item: D044-715-011RevA

Parent Item Name: R44 Cargo Mirror


Comments:

Start Date: 8/24/09

Required Date: 8/24/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
M6061T6S.063		Purchased	No			110	sf	120.1891	1.0745	1.6117		
												
6061-T6 .063 Sheet												

B9-1074

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

MAT

120.1891211

109463

-0.0223

110551

120.211421

FE-032-EF

Purchased

No

180

Each

137.0000

8.0000

Inserts

110551

sf

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST

137

108546

37

110836

100

Manufactured

No

230

Each

41.0000

4.0000

D1048RevA

Saddle

108546

sf

sf

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST

41

45382

41

45382

9/10/21 (2x) sf

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

August 25, 2009 1:32:39 PM

Work Order ID: 51486

Parent Item: D044-715-011RevA

Parent Item Name: R44 Cargo Mirror


Comments:

Start Date: 8/24/09

Required Date: 8/24/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D1049RevA  Saddle		Manufactured	No			230	Each	29.0000	4.0000			

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST	29
39919	9
45810	20

D2010-104RevD  Mirror Arm 369/500		Manufactured	No			230	Each	17.0000	2.0000			
---	--	--------------	----	--	--	-----	------	---------	--------	--	--	--

Warehouse Loc Qty Loc Code
Location

Main Warehouse

ST	17
24969	0
40046	17

45810 *sl*
SV

40046 *sl* 9/10/21 *(200)*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

August 25, 2009 1:32:39 PM

Work Order ID: 51486

Parent Item: D044-715-011RevA

Parent Item Name: R44 Cargo Mirror

Comments:

Start Date: 8/24/09

Required Date: 8/24/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2011-101RevG 6" Mirror		Manufactured	No			230	Each	13.0000	2.0000			

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST

13

22179

0

43793

11

47592

1

51351

1

51351 scf

AN3-4A
Bolt

Purchased

No

230

Each

2,213.000 8.0000

Warehouse
Location

Loc Qty

Loc Code

Main Warehouse

ST

2213

103915

154

104214

500

104291

300

104322

200

104374

200

104625

300

104817

559

103915 9/10/09 scf (24)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

August 25, 2009 1:32:39 PM

Work Order ID: 51486

Parent Item: D044-715-011RevA

Parent Item Name: R44 Cargo Mirror

Comments:

Start Date: 8/24/09

Required Date: 8/24/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN526C1032R10		Purchased	No			230	Each	594.0000	8.0000			

Screw

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST 594

108062 135

108167 35

110049 424

ALS4-1032-130

Purchased

No

230

Each

6,277.000 8.0000

Insert

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST 6277

110511 6277

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

August 25, 2009 1:32:39 PM

Work Order ID: 51486

Parent Item: D044-715-011RevA

Parent Item Name: R44 Cargo Mirror

Comments:

Start Date: 8/24/09

Required Date: 8/24/09

Start Qty: 2.00

Required Qty: 2.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN960JD10L		Purchased	No			230	Each	6,679.000	8.0000			



Washer

SP

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
FP	-2	
109632	-2	
Main Warehouse		
ST	6681	
101291	16	
104885	153	
105793	236	
109632	1276	
110985	5000	

109639 9/11/21 (2W) SP

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	S1486
Description: R44 CARGO MIRROR		Part Number:	D 3243-1
Inspection Dwg:	Rev: A	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø .201	+ .005 - .001	.204	✓			
Ø .290	+ .006 - .001	.290	✓			
.500	± .010	.500	✓			
.750	± .010	.751	✓			
5.360	± .010	5.361	✓			
5.810	± .010	5.815	✓			
6.560	± .010	6.563	✓			
.500	± .010	.501	✓			
3.339	± .010	3.337	✓			
3.714	± .010	3.711	✓			
4.214	± .010	4.211	✓			
5.273	± .010	5.274	✓			
1.375	± .010	1.377	✓			
8.206	± .010	8.203	✓			
8.581	± .010	8.590	✓			
11.420	± .010	11.422	✓			
11.920	± .010	11.918	✓			
.063	± .010	.063	✓			

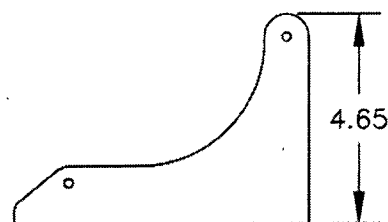
Measured by:	IB	Audited by:	S	Prototype Approval:	N/A
Date:	9-10-14	Date:	9/10/14	Date:	N/A

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	

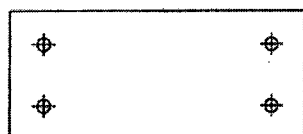
P/O D044-715-011



DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D3243	REV. A SHEET 1 OF 1
DATE 04.01.09		TITLE BRACKET	SCALE 1:2
A	04.01.09	NEW ISSUE	



R0.188 (TYP)



D3243-1 BEND DETAIL/
D3243-041 ASSEMBLY
SCALE 1:4

INSTALL
FE-032-EF INSERTS
(4 PLACES)

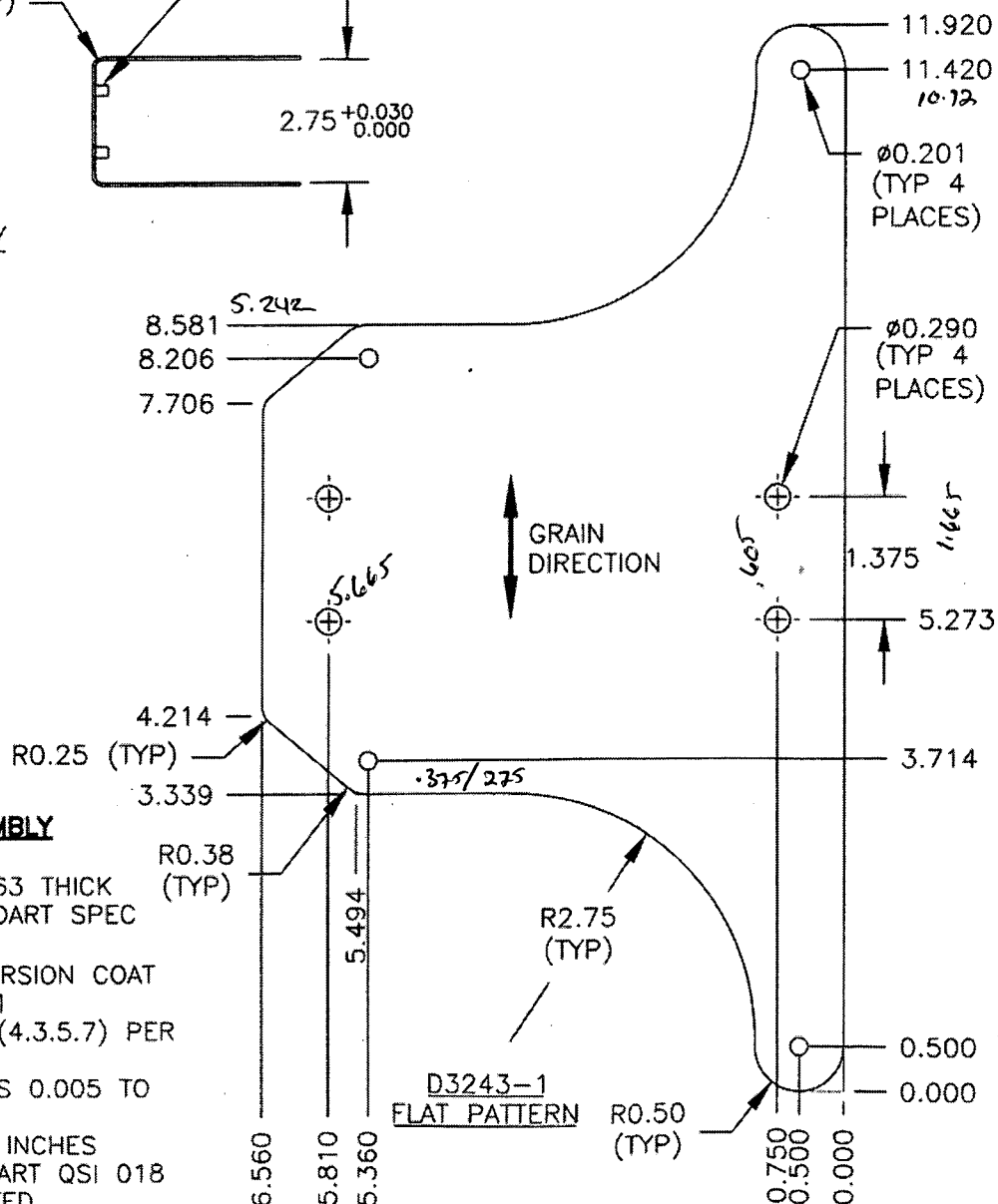
ISSUE
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO 51486

NO 5/486

RELEASED
04-02-03

D3243-041 BRACKET ASSEMBLY
(D3243-1 BRACKET)

- 1) MATERIAL: 6061-T6, 0.063 THICK (QQ-A-250/11, REF DART SPEC M6061T6S.063)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 POWDER COAT BLACK (4.3.5.7) PER DART QSI 005 4.3
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED



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DART AEROSPACE LTD.
1270 Aberdeen Street
Hawkesbury, ON, K6A 1K7
CANADA

Tel: 1 613 632 3336
Fax: 1 613 632 4443

e-mail: heli@dartaero.com
<http://www.dartaero.com>

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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO 51484

INSTALLATION INSTRUCTIONS

IIN-D044-715

Cargo Mirror Installation

ROBINSON R44 MODELS

CANADA DEPARTMENT OF TRANSPORT AIRCRAFT CERTIFICATION BRANCH DAO # 01-O-01	
APPROVED	
BY: <u><i>D. Shepherd</i></u>	
D. SHEPHERD (DE # 02)	
DATE: <u>JAN. 20 2004</u>	
CERT. NO.: <u></u>	
ISSUE NO.: <u>#1</u>	

Prepared By: *C. Provencal*

C. Provencal
Mechanical Designer

Checked By: *D. Shepherd*

D. Shepherd, P.Eng.
DE #02

Released By: *D. Shepherd*

D. Shepherd, P. Eng.
DE #02

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Revision: **A**

Date: 04.01.20

REVISION RECORD

Revision	Issue Date	Description
A	04.01.20	New Issue

SHOP COPY
RETURN TO
ENGINEERING
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SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 51486

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Revision: A

Date: 04.01.20

1. INTRODUCTION

The Dart D044-715-011 Cargo Mirror Installation mounts to the front end of the right-hand Robinson R44 skidtube to provide better viewing of the cargo hook for pickup and release.

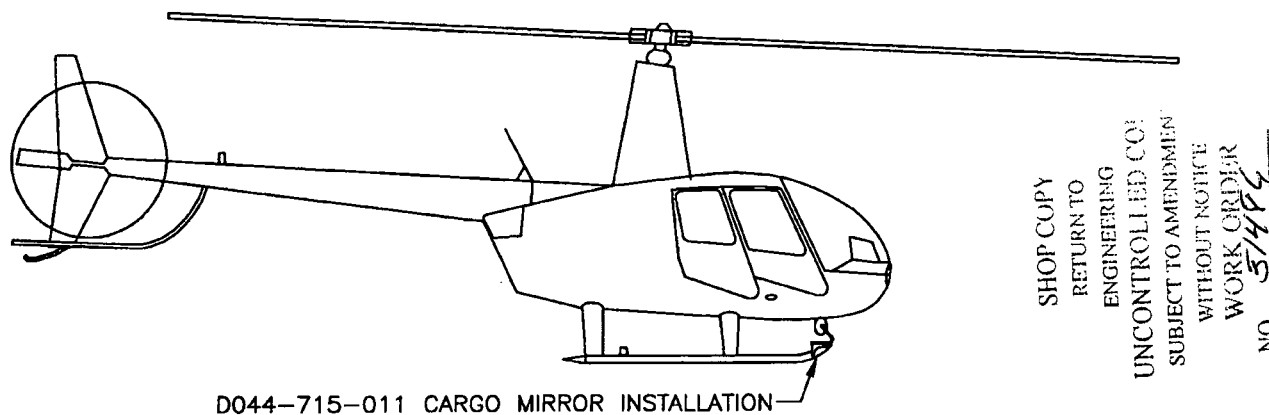


Figure 1 - Location of R44 Cargo Mirror Installation (SIDE VIEW)

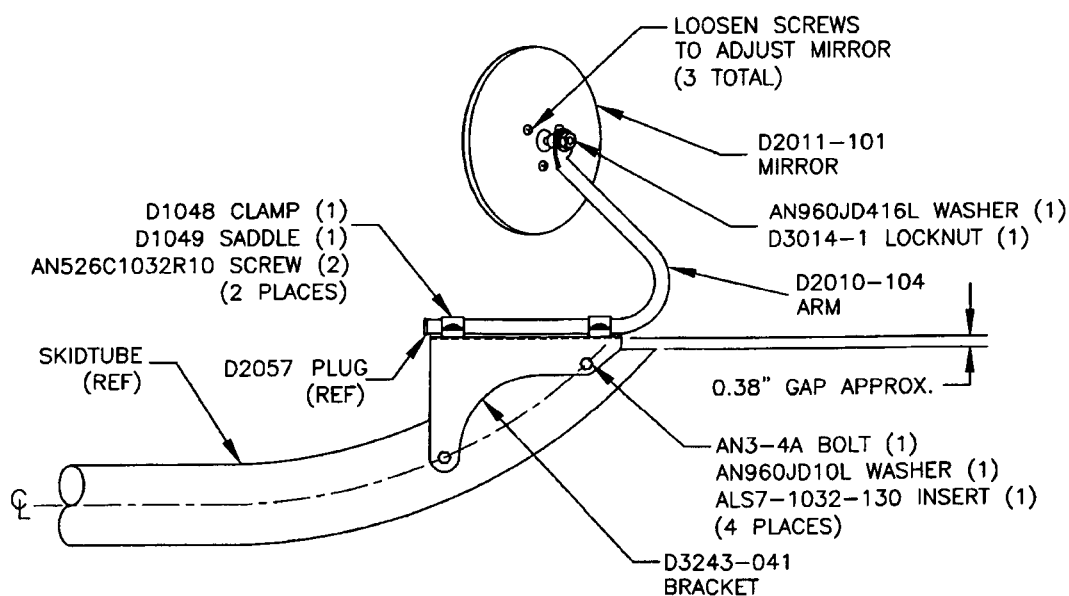


Figure 2 - Cargo Mirror Installation (SIDE VIEW)

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2. GENERAL NOTES**COMPATIBILITY**

Compatibility of this installation with the aircraft is the **responsibility of the installer**. Ensure that this installation does not conflict with a previous modification.

CONTINUING AIRWORTHINESS

This installation should be maintained in accordance with the Instructions for Continued Airworthiness ICA-D044-715.

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3. INSTALLATION INSTRUCTIONS

To install the Dart Cargo Mirror Installation on the R44 skidtube:

1. Locate the D3243-041 Bracket with approximately 0.38" (10mm) space between the top of the skidtube and the bracket, as shown in Figure 2. Transfer drill the 4 holes from the bracket to the centerline of skidtube and enlarge to 10/64" (Ø0.297"). Deburr holes and wet install ALS7-1032-130 inserts using MIL-P-85582 or MIL-P-23377 primer.
2. Install the D3243-041 Bracket on the skidtube using the AN3 hardware. The bolts should be sealed with Sikaflex-241/-291 or Proseal 890 or MIL-S-8802 Class 'B2' sealant before installing as per Figure 2.
3. Install remaining hardware per Figure 2 as required. Adjust the angle of the D2010-104 Arm and tighten the AN526C1032R10 screws to secure arm.
4. To adjust the mirror: loosen (DO NOT REMOVE) the three adjustment screws shown in Figure 2, reposition the mirror, then tighten the screws.

4. WEIGHT AND BALANCE

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D044-715-011	1.3 lb	41.7 in	54.2 lb-kG	32.0 in	41.6 in-lb
Cargo Mirror Installation	0.59 kg	1.06 m	0.63 m-kG	0.81 m	0.48 m-kG

5. PARTS LIST

Qty	Part Number	Description
X	D044-715-011	CARGO MIRROR INSTALLATION
2	D1048	Clamp
2	D1049	Saddle
1	D2010-104	Arm
1	D2011-101	Mirror
1	*D3014-1	Locknut
1	D3243-041	Bracket
4	ALS7-1032-130	Insert (or AKS7-1032-130, AKS4-1032-130, ALS4-1032-130)
4	AN3-4A	Bolt
4	AN526C1032R10	Screw (or AN526-1032R10)
4	AN960JD10L	Washers
1	*AN960JD416L	Washer

* PARTS ARE INCLUDED WITH D2011-101 MIRROR

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32.2 CARGO MIRROR REMOVAL

- 32.2.1 Remove the AN3 bolts securing the D3243-041 Bracket to the skidtube and remove the Cargo Mirror.
- 32.2.2 Reinstall the AN3-4A bolts in the inserts. The bolts should be sealed with Sikaflex-241/-291 or Proseal 890 or MIL-S-8802 Class 'B2' sealant before installing.

32.3 WEIGHT AND BALANCE

Installation	Weight	LATERAL		LONGITUDINAL	
		Arm	Moment	Arm	Moment
D044-715-011 Cargo Mirror Installation	1.3 lb 0.59 kg	41.7 in 1.06 m	54.2 lb-kG 0.63 m-kG	32.0 in 0.81 m	41.6 in-lb 0.48 m-kG

32.4 PARTS LIST

Qty	Part Number	Description
X	D044-715-011	CARGO MIRROR INSTALLATION
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1	D2010-104	Arm
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1	*D3014-1	Locknut
1	D3243-041	Bracket
4	ALS7-1032-130	Insert (or AKS7-1032-130, AKS4-1032-130, ALS4-1032-130)
4	AN3-4A	Bolt
4	AN526C1032R10	Screw (or AN526-1032R10)
4	AN960JD10L	Washers
1	*AN960JD416L	Washer

* PARTS ARE INCLUDED WITH D2011-101 MIRROR

TC Accepted
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